

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
WACO DIVISION

PARKERVISION, INC.,
Plaintiff,

vs.

INTEL CORPORATION,
Defendant.

Civil Action No. 6:20-cv-00108-ADA

JURY TRIAL DEMANDED

REDACTED PUBLIC VERSION

**SEALED ANSWER, AFFIRMATIVE DEFENSES, AND COUNTERCLAIMS
TO THIRD AMENDED COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff ParkerVision, Inc.’s (“ParkerVision”) patent infringement claims against Defendant Intel Corporation (“Intel”) have no merit and Intel’s products do not use ParkerVision’s purported inventions in the patents-at-issue in this case, as evidenced by findings by courts in Germany that chips accused in this case do not infringe ParkerVision’s closely related European Patent No. 1 135 853 (the “EP ‘853 patent”), and that the EP ‘853 patent is invalid. *See* Munich Regional Court, 7 O 2141/17, Final Judgment (trans.) (Ger.) at 19, Apr. 25, 2019; Bundespatentgericht [BPatG] [Federal Patent Court], 5 Ni 19/17 (EP), Decision on Costs and Determination of the Value in Dispute (trans.) (Ger.) at 10, 15, Dec. 16, 2019. Intel engineers independently developed the cellular modem technology at issue without knowledge of ParkerVision’s technology or patents. Moreover, ParkerVision’s claims to have invented ground-breaking technology have proved to be unfounded, as Intel quickly realized that ParkerVision’s purported intellectual property was “snake oil.” Both Intel and third parties quickly realized (and very bluntly stated) that ParkerVision’s claims to have developed allegedly “revolutionary” technology turned out to be completely baseless. ParkerVision has repeatedly overstated the benefits and performance of its technology, making claims publicly that are contradicted and unsupported by its own internal documents, and the allegations in its complaint against Intel are more of the same, as evidenced by the Munich Regional Court’s

finding that one of the same chips at issue here does not infringe a closely related ParkerVision patent.

Accordingly, and as alleged herein, Intel hereby answers ParkerVision's Third Amended Complaint for Patent Infringement (D.I. 146) as follows.

NATURE OF THE ACTION¹

1. This paragraph states legal conclusions to which no response is required. To the extent a further response is required, Intel denies that it has infringed any asserted patent, directly or indirectly. Intel denies any remaining allegations in this paragraph.

PARTIES

2. Intel lacks knowledge or information sufficient to form a belief as to the truth of the allegations in paragraph 2, and therefore denies the same.

3. Intel admits that it is a corporation organized and existing under the laws of Delaware with a place of business at 2200 Mission College Boulevard, Santa Clara, California 95054.

4. Intel admits that it has facilities at 1300 S. Mopac Expressway, Austin, Texas 78746; 6500 River Place Blvd, Bldg. 7, Austin, Texas 78730; and 5113 Southwest Parkway, Austin, Texas 78735. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

5. Intel admits that it has a Texas registered agent located at CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

¹ For ease of reference, Intel uses the headings used in ParkerVision's Third Amended Complaint. In so doing, Intel does not admit any of the allegations contained in those headings.

6. Intel admits that since 1989, it has been registered to do business in the State of Texas under Texas Taxpayer Number 19416727436. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

JURISDICTION AND VENUE

7. This paragraph states legal conclusions to which no response is required. To the extent a further response is required, Intel admits that this Court has subject matter jurisdiction over ParkerVision's allegations of patent infringement. Intel denies any remaining allegations in this paragraph.

8. This paragraph states legal conclusions to which no response is required. To the extent a further response is required, Intel admits that Intel Corporation is a named party in this action and that it has a place of business in this District, specifically, 1300 S. Mopac Expressway, Austin, Texas 78746. Intel specifically denies that it has committed acts of infringement in this District or anywhere else. Intel further denies that venue is convenient in this District, and denies that venue will be proper or convenient in this District for all matters where Intel is a named party; given the extent of Intel's operations in other states, transfer out of this District and/or Division will presumably be appropriate in other cases and nothing herein should be read as a waiver of Intel's right to request transfer out of this Division and/or District in future cases as may be appropriate. Except as so expressly admitted, Intel denies the remaining allegations in this paragraph.

9. This paragraph states legal conclusions to which no response is required. To the extent a further response is required, Intel admits that it has recruited and employs some Texas residents. Intel denies any remaining allegations in this paragraph.

10. This paragraph states legal conclusions to which no response is required. To the extent a further response is required, Intel admits that it conducts business within this judicial district; that it has facilities in this judicial district; that it receives income from its

operations in this judicial district; and that it employs Texas residents within this judicial district. Intel denies any remaining allegations in this paragraph.

11. This paragraph states legal conclusions to which no response is required. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

12. Intel denies that it has infringed any asserted patent, directly or indirectly. Moreover, this paragraph states legal conclusions to which no response is required. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

13. This paragraph states legal conclusions to which no response is required. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

14. Intel admits that it has facilities in Austin and that it has employees at those facilities but none of those employees have any material connection to this case. The remaining statements in this paragraph are legal conclusions to which no response is required. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

15. Intel admits that its website describes its operations in Austin as follows: “[l]ocated in the capitol city of Texas, Intel Austin is an important research and development center for the Intel technology that is changing the way we live, work, and play. Among the innovations developed in Austin are core technologies for next-generation microprocessors, platforms and base software; ground-breaking silicon solutions for computing and communications devices, which includes handheld computing and cellular communications; and cutting-edge network storage products.” To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

16. Intel admits that the third-party website cited in paragraph 16 of the Third Amended Complaint purports to list H-1B labor condition applications for “Employer Name”

“Intel Corporation” at “Worksite City” “Austin, TX.” Intel lacks knowledge and information sufficient to form a belief as to the truth of the statements on the cited third-party website at this time, and therefore denies the same. The remaining statements in this paragraph are legal conclusions to which no response is required. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

17. Intel admits that its website lists job openings for positions in Austin, Texas. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

18. Intel admits that it is a party to *Flash-Control, LLC v. Intel Corp.*, Case No. 1:19-cv-01107 (W.D. Tex.) and *VLSI Tech. LLC v. Intel Corp.*, Case No. 1:19-cv-00977 (W.D. Tex.). To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

BACKGROUND

19. Intel lacks knowledge or information sufficient to respond to ParkerVision’s allegations in this paragraph, and therefore denies such allegations on that basis.

20. Intel lacks knowledge or information sufficient to respond to ParkerVision’s allegations in this paragraph, and therefore denies such allegations on that basis.

21. Intel lacks knowledge or information sufficient to respond to ParkerVision’s allegations in this paragraph, and therefore denies such allegations on that basis.

22. Intel denies the allegations of paragraph 22, including, without limitation, the assertion that ParkerVision allegedly “developed an innovative method of RF direct conversion by a process of sampling a RF carrier signal and transferring energy to create a down-converted baseband signal.” Intel lacks knowledge or information sufficient to respond to ParkerVision’s assertions regarding the time frame in which ParkerVision was allegedly working on this

technology, and therefore denies such allegations on that basis. Intel denies any remaining allegations in this paragraph.

23. Intel lacks knowledge or information sufficient to respond to ParkerVision's assertions regarding the creation of prototype chips or conduction of tests, and therefore denies such allegations on that basis. Intel denies that ParkerVision's "technology led to improved RF receiver performance, lower power consumption, reduced size and integration benefits" and further denies that ParkerVision's technology allowed "RF transceivers [to] be built smaller, cheaper and with greater improved performance." Intel denies any remaining allegations in this paragraph.

24. Intel denies that ParkerVision's technology represented "innovation[]" and further denies that ParkerVision developed technologies novel or useful in the areas of "additional RF down-conversion technologies, RF up-conversion technologies and other related direct-conversion technologies," or "complementary wireless communications technologies that involved interactions, processes, and controls between the baseband processor and the transceiver." Intel denies that ParkerVision's technology "improved" or "enhanced the operation of transceivers that incorporate ParkerVision's down-converter and up-converter technologies." Intel lacks knowledge or information sufficient to respond to ParkerVision's assertions regarding the size of its patent portfolio, and therefore denies such allegations on that basis. Intel denies any remaining allegations in this paragraph.

25. Intel denies that ParkerVision's technology constituted "innovations." Qualcomm is not a party to this lawsuit, and Intel denies that Qualcomm's alleged conduct has any bearing on this litigation. Intel denies any remaining allegations in this paragraph.

26. Intel denies that ParkerVision's "technology" is "significant," "revolutionary," "critical," a "holy grail," or that it offered performance benefits, as evidenced by ParkerVision's history of failed claims of patent infringement. For example, the Federal Patent

Court in Germany rejected ParkerVision's contention that it invented a "fundamentally different approach to energy transmission down-conversion," and instead found that ParkerVision's EP '853 patent would have been found invalid, had it not already expired. *See Bundespatentgericht [BPatG] [Federal Patent Court], 5 Ni 19/17 (EP), Decision on Costs and Determination of the Value in Dispute (Ger.) (trans.)* at 10, 15, Dec. 16, 2019. Intel also denies the remaining characterizations of ParkerVision's technology in this paragraph. These purported statements by individuals at Qualcomm are not relevant to this litigation and do not support ParkerVision's allegations of infringement here, particularly in light of ParkerVision's losses on its claims of patent infringement against Qualcomm in the Middle District of Florida and at the Federal Circuit. *See Parkervision, Inc. v. Qualcomm Inc.*, 27 F. Supp. 3d 1266, 1269 (M.D. Fla. 2014), *aff'd in part, rev'd in part*, 621 F. App'x. 1009 (Fed. Cir. 2015). Intel denies any remaining allegations in this paragraph.

27. Intel lacks knowledge or information sufficient to respond to ParkerVision's allegations in this paragraph, and therefore denies such allegations on that basis.

28. Intel denies that ParkerVision's purported technology addressed "a critical need for smaller, more efficient receivers capable of supporting multiple frequency bands," and denies any remaining allegations in this paragraph.

29. Intel lacks knowledge or information sufficient to respond to ParkerVision's allegations in this paragraph, and therefore denies such allegations on that basis.

30. Intel denies that it uses or has ever used ParkerVision's technology. Intel further denies that ParkerVision has been damaged by Intel's conduct. Intel lacks knowledge or information sufficient to respond to ParkerVision's remaining allegations in this paragraph, and therefore denies such remaining allegations on that basis.

31. Denied.

INTEL CHIPS

32. Intel admits that Intel and/or its affiliates have manufactured and sold radio frequency (“RF”) transceiver chips and/or modems, including the Intel PMB 5750, PMB 5757 and PMB 5762 (collectively, the “RF Transceiver Chips”), outside the United States in Asia, and that those same chips may be incorporated by third parties into smartphones. Intel objects to ParkerVision’s belated attempt to broaden this case beyond the RF Transceiver Chips through its amended definition of “Intel Chips.” At the April 26, 2021 hearing, the Court ordered that it was too late for ParkerVision to add non-cellular products such as the “near field communication devices, smart watches, personal area networks, cable modems, smart meters, DSL modems, Bluetooth devices and/or Wi-Fi devices” referenced in Paragraph 32, absent a significant adjustment to the case schedule. In the Joint Motion to Amend Scheduling Order filed by ParkerVision on February 9, 2022 and granted by the Court on April 14, 2022, the parties agreed that the first trial was limited to “Accused cellular products.” *See* Dkt. No. 108. In light of the current status of these products, Intel’s investigation into near field communication devices, smart watches, personal area networks, cable modems, smart meters, DSL modems, Bluetooth devices and/or Wi-Fi devices is ongoing, and on that basis, Intel denies any allegations relating to such products. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

33. Intel admits that its RF Transceiver Chips have been incorporated by third parties into devices such as Apple iPhones. Intel further admits that its RF Transceiver Chips offer, among other things, the ability to connect to a cellular network. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

34. Intel admits that the PMB 5750 has been incorporated by third parties into the Apple iPhone 7 and 7 Plus. Intel admits that the PMB 5757 has been incorporated by third parties into the Apple iPhone 8, 8 Plus, and X. Intel admits that the PMB 5762 has been

incorporated by third parties into the Apple iPhone XR, XS, and XS Max. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

35. Intel states that Apple acquired assets related to Intel's RF Transceiver Chips in December 2019. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

RESPONSE TO PARKERVISION'S BASELESS ALLEGATIONS OF WILLFUL

INFRINGEMENT

36. ParkerVision's allegations of willful infringement are baseless for multiple reasons. *First*, the Intel receiver technology-at-issue was designed by Werner Schelmbauer, a former Infineon engineer who joined Intel in January 2011, and who had no contact with ParkerVision and has no knowledge of any ParkerVision patent or technology. *Second*, neither Infineon nor Intel uses or has ever used any ParkerVision technology, let alone the ParkerVision receiver technology-at-issue in this case, which an Intel employee described in a contemporaneous, internal document as "snake oil" and third parties described as "a piece of sh**" and a "black box" that "didn't do anything better, or faster, or more efficiently than we could do in a number of ways." *Third*, while many of ParkerVision's allegations predate Intel's acquisition of Infineon, the documentary record and testimony of witnesses to date make clear that ParkerVision tried to interest Infineon in its "d2p" transmitter technology, which is unrelated to the patents-at-issue in this case, Infineon rejected that technology, told ParkerVision that it did not think ParkerVision's technology is viable, and decided to use its own independently developed technology. *Fourth*, the independently developed receiver technology in Intel's SMARTi™ 5 transceivers, which is at issue in this case, has already been found not to infringe a ParkerVision European patent that ParkerVision admits is related to the ParkerVision patents-at-issue in this case. *Fifth*, ParkerVision has repeatedly misled investors and the public about its business and technology, including in SEC filings where ParkerVision

continued to tout a project for LG Innotek in connection with a 2009 \$16 million stock offering, while contemporaneous, internal ParkerVision documents describe [REDACTED]

[REDACTED] Intel denies that it uses or has ever used ParkerVision's technology. Intel further denies that its SMARTi™ products infringe any ParkerVision patent-at-issue. Intel further denies that the engineers who developed the receiver functionality-at-issue were in possession of ParkerVision confidential technical information that is the subject of the patents-at-issue or had knowledge of the ParkerVision patents-at-issue at any relevant time. ParkerVision's allegations of willful infringement are therefore baseless and Intel reserves all rights, including the right to seek attorneys' fees and sanctions, should ParkerVision pursue claims for willful infringement. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

37. Intel admits that individuals from ParkerVision met with Intel employees and Infineon employees but denies that either Intel or Infineon obtained any ParkerVision confidential technical information sufficient to practice ParkerVision's alleged energy sampling/Direct2Data (D2D) invention or used any ParkerVision information in the design of the accused SMARTi™ products. Intel admits that it acquired assets related to Infineon's wireless business in January 2011. Intel lacks knowledge or information sufficient to respond to ParkerVision's remaining allegations in this paragraph, and therefore denies such remaining allegations on that basis. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

38. Intel admits that ParkerVision and Intel entered into Non-Disclosure Agreements dated August 5, 1999 and September 27, 2002. Intel denies that ParkerVision discussed any of the patents-at-issue with Intel, as all of those patents issued in June 2003 or later. Moreover, contemporaneous Intel internal emails note that "ParkerVision has always felt like a stock scam" in response to an October 1999 press release from Asensio & Company

entitled “ParkerVision Possesses No Valuable Technology” and question whether a ParkerVision July 2001 press release regarding ParkerVision intellectual property related to ParkerVision’s “D2D” (aka “Direct2Data™ wireless semiconductor technology”) was “[m]ore snake oil.” Internal ParkerVision documents likewise show that Babak Bastani, “Director, Global R&D, WMSG-Radio Products Dev” at Freescale, “evaluated our d2d as a mixer in Plantation, and thought it was a ‘piece of sh**.’” And a September 1999 Forbes article noted the discrepancy between a ParkerVision “press release in March 1998 touting successful product testing at Boeing” and the first-hand account of “Dale Klotz, manager of radio frequency development at Boeing” who described the same testing as a “black box test” that showed ParkerVision’s technology “didn’t do anything better, or faster, or more efficiently than we could do in a number of ways.” The same 1999 Forbes article noted that “[t]he lone bullish analyst works for ParkerVision’s underwriter, Whale Securities,” a firm which “specializes in smallish firms with grandiose ambitions” and which “has paid at least \$900,000 in fines to the NASD for such transgressions as stock manipulation.” ParkerVision nonetheless continued to attempt to engage Intel, without success. Intel lacks knowledge or information sufficient to respond to ParkerVision’s remaining allegations in this paragraph, and therefore denies such remaining allegations on that basis. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

39. Intel denies that ParkerVision discussed any patents-in-suit with Intel. Intel admits that ParkerVision’s D2D technology is the subject matter of the claims of the patents-in-suit, but Intel denies that it uses or has ever used ParkerVision’s energy transfer technology in its SMARTi transceivers or Wi-Fi chips and denies that any Intel product infringes any ParkerVision patent. Intel lacks knowledge or information sufficient to respond to ParkerVision’s remaining allegations in this paragraph, and therefore denies such remaining

allegations on that basis. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

40. Intel lacks knowledge or information sufficient to respond to ParkerVision's allegations in this paragraph, and therefore denies such allegations on that basis. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

41. Intel denies that any Intel product infringes any ParkerVision patent. Intel denies that Zdravko Boos developed the receiver functionality in the SMARTi products-at-issue. Moreover, the August 21, 2002 date in ParkerVision's allegation appears to be based on a technical error that has been corrected. The correct date for the document ParkerVision appears to be relying on is April 26, 2006. Intel lacks knowledge or information sufficient to respond to ParkerVision's remaining allegations in this paragraph, and therefore denies such remaining allegations on that basis. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

42. Intel admits that Zdravko Boos sent an email to Bernd Adler and others at Infineon that forwarded a ParkerVision press release on January 21, 2005. Intel denies that the press release was directed to ParkerVision's D2D technology; rather, the ParkerVision power amplifier technology announced in the press release relates to transmit technology unrelated to the patents-at-issue. For example, the press release states that "[a]ccording to ParkerVision, its power amplifiers reduce total *transmitter* power consumption by 50% to 80%." To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

43. Intel admits that Jeff Leach sent an unsolicited email to Gerhard Schmidt in February 2006 to "introduce" ParkerVision. Intel admits that Mr. Leach invited Mr. Schmidt to ParkerVision's suite at "3GSM" and referred to a ParkerVision technology "called d2p" that is not related to the patents-at-issue in this case. Mr. Leach's email did not refer to any

ParkerVision patent or ParkerVision's alleged energy sampling/Direct2Data (D2D) invention. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

44. Intel admits that ParkerVision produced a document dated "2-14-2006" that purports to summarize a meeting between individuals from Infineon and individuals from ParkerVision, including Mr. Jeff Leach. The document does not mention any ParkerVision patent or refer to any discussion of ParkerVision's alleged energy sampling/Direct2Data (D2D) invention. To the extent a further response is required, Intel lacks knowledge or information sufficient to respond to ParkerVision's allegations in this paragraph, and therefore denies such allegations on that basis.

45. Intel admits that ParkerVision produced an email dated February 20, 2006 from Mr. Jeff Leach to individuals at Infineon that indicates three attachments. The email does not mention any ParkerVision patent. To the extent a further response is required, Intel lacks knowledge or information sufficient to respond to ParkerVision's allegations in this paragraph, and therefore denies such allegations on that basis.

46. Intel admits that ParkerVision produced an email chain dated April 20, 2006 between rudolf-koch@infineon.com and jleach@ParkerVision.com. The email does not mention any ParkerVision patent. To the extent a further response is required, Intel lacks knowledge or information sufficient to respond to ParkerVision's allegations in this paragraph, and therefore denies such allegations on that basis.

47. Intel admits that ParkerVision produced a document dated "4-26-2006" that purports to summarize a meeting between individuals from Infineon and individuals from ParkerVision, including Mr. Jeff Leach. Mr. Leach testified that he had no recollection of the meeting or the document at his deposition. None of the individuals that ParkerVision identifies from Infineon designed the receiver circuits at issue in this case. Moreover, the document

produced by ParkerVision does not mention any specific ParkerVision patent. To the extent a further response is required, Intel lacks knowledge or information sufficient to respond to ParkerVision's allegations in this paragraph, and therefore denies such allegations on that basis.

48. Intel admits that ParkerVision produced a document dated "4-26-2006" that purports to summarize a meeting between individuals from Infineon and individuals from ParkerVision, including Mr. Jeff Leach. Mr. Leach testified that he had no recollection of the meeting or the document at his deposition. None of the individuals from Infineon whose names appear on the document designed the receiver circuits at issue in this case. Moreover, the document does not mention any specific ParkerVision patent. To the extent a further response is required, Intel lacks knowledge or information sufficient to respond to ParkerVision's allegations in this paragraph, and therefore denies such allegations on that basis.

49. Intel admits that ParkerVision produced a document dated "4-26-2006" that purports to summarize a meeting between individuals from Infineon and individuals from ParkerVision, including Mr. Jeff Leach, and an email dated May 4, 2006 from Mr. Leach to individuals from Infineon. Mr. Leach testified that he had no recollection of the meeting or the document purporting to summarize the meeting at his deposition. None of the individuals from Infineon whose names appear on the document purporting to summarize a meeting between Infineon and ParkerVision designed the receiver circuits at issue in this case. Moreover, neither the document nor the email mentions any specific ParkerVision patent. The document does, however, note that "JP and JS took a few minutes to 'pull' some slides out based on the lack of NDA," which belies the insinuation that ParkerVision shared confidential information with Infineon at the meeting the document purports to summarize. To the extent a further response is required, Intel lacks knowledge or information sufficient to respond to ParkerVision's allegations in this paragraph, and therefore denies such allegations on that basis.

50. Denied.

51. Intel admits that Joseph Strobl sent an email to Messrs. Koch and Adler dated May 3, 2006. Intel admits that Mr. Koch sent an invitation dated May 3, 2006 to a meeting on May 9, 2006 with the subject “Abstimmung Protokoll Parkervision.” To the extent a further response is required, Intel lacks knowledge or information sufficient to respond to ParkerVision’s allegations in this paragraph, and therefore denies such allegations on that basis.

52. Intel admits that a document entitled “STEPS-Dialog 2006” for “Employee: Boos Zdravko” states “Parker Vision *transmitter* concept has been evaluated and based on the *complexity* and *required chip area* plus a very high royalty cost cooperation has been rejected.” (Emphases added). Contrary to ParkerVision’s allegation that “unknown to ParkerVision, Infineon internally decided to reject” ParkerVision’s overtures, ParkerVision’s own documents state that Infineon told ParkerVision that its “quote/proposal was not realistic” and asked ParkerVision employee “John [Stuckey] to re-quote to Bernhard Straub (Business Development).” Intel admits that Infineon decided not to work with ParkerVision on its D2P transmitter technology or otherwise use any ParkerVision technology. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

53. Contrary to ParkerVision’s allegations in this paragraph, ParkerVision’s own documents state that Infineon told ParkerVision that its quote/proposal” regarding its D2P transmitter technology “was not realistic” and asked ParkerVision employee “John [Stuckey] to re-quote to Bernhard Straub (Business Development).” Intel denies that Infineon continued to evaluate and monitor ParkerVision’s patented technologies while leading ParkerVision to believe that Infineon was exploring potential business relationships with ParkerVision. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

54. Intel admits that ParkerVision has produced documents and communications with Infineon related to its “D2P” transmitter technology, but denies that D2P was “inventive patented” technology. Intel admits that Shmuel Ravid wrote an email dated November 6, 2007

that states “Parker vision doesn’t have a very good track record as it has to do with new IP. If you remember they had some groundbreaking mixer IP some 6-7 years ago that really didn’t materialize. I don’t know what they have now but we should be very very very suspicious getting into bed with them Bottom line: in my opinion there is no reason to do anything with them before they can present real data from REAL Si under a real case scenario of a real system.” Intel denies that Mr. Ravid’s email characterizes any ParkerVision technology as “groundbreaking” IP or that Intel was “monitoring ParkerVision” or its technologies, as ParkerVision alleges. To the contrary, Mr. Ravid’s email makes clear that ParkerVision’s claims to have developed “groundbreaking IP” never materialized and recommends against engaging with ParkerVision. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

55. Intel admits that Zdravko Boos sent a meeting invitation dated September 18, 2007 to a number of colleagues at Infineon with the Subject “MMTx AM path meeting.” On information and belief, “MMTx” in that context refers to “Multimode Transmitter,” which is unrelated to the receiver technology-at-issue in this case. Intel admits that Mr. Boos’s September 18, 2007 meeting invitation states “30 min shift due to Parker Vision PA presentation.” On information and belief, “PA” in that context refers to “Power Amplifier,” which is a transmit-chain component unrelated to the receiver technology-at-issue in this case. Intel denies that Mr. Boos’s email “indicated that numerous employees were well aware of ParkerVision and its technology” or that numerous employees were well aware of ParkerVision and its technology. Intel lacks knowledge or information sufficient to respond to ParkerVision’s remaining allegations in this paragraph, and therefore denies such allegations on that basis.

56. Intel admits that Zdravko Boos sent an email dated August 14, 2008 to Bernd Adler that states “I started, as you do, to look to the competitors’ financial reports. Here is the

ParkerVision one[:] Revenue for 2008, if any, will not be sufficient to cover our operational expenses for 2008. The expected continued losses and use of cash will continue to be funded from available working capital. We believe that our current capital resources will be sufficient to support our liquidity requirements at least into the first quarter of 2009.” In August 2008, Zdravko Boos also emailed Bernd Adler the publicly disclosed salaries of ParkerVision’s executives with the subject line “How they manage this?” In August 2008, Zdravko Boos also emailed Bernd Adler a link to a website with the url “pvnotes.com/pv-deception.” The website pvnotes.com was a well-known website documenting ParkerVision’s lack of credibility and inaccurate technological assertions. *See* <https://web.archive.org/web/20081121003928/http://www.pvnotes.com/pv-deception>. Intel lacks knowledge or information sufficient to respond to ParkerVision’s remaining allegations in this paragraph, and therefore denies such allegations on that basis.

57. The documentary record and testimony of witnesses to date make clear that ParkerVision repeatedly attempted to interest Infineon in its “d2p” technology, which is unrelated to the patents-at-issue in this case, and Infineon told ParkerVision that its business proposals were not realistic and that its technology was not viable compared to Infineon’s independently developed technology. For example, ParkerVision’s own documents state that Infineon told ParkerVision that its “quote/proposal was not realistic” and asked ParkerVision employee “John [Stuckey] to re-quote to Bernhard Straub (Business Development).” ParkerVision also produced a document dated “09-18-2007” that purports to summarize a meeting between Jeff Leach and “D. Feher” from ParkerVision and Stefan Heinen and Zdravko Boos from Infineon where ParkerVision’s objectives for the meeting include “[r]e-gain [Infineon’s] interest in d2p.” On information and belief, d2p is a marketing term for ParkerVision’s Power Amplifier technology, which is unrelated to the receiver technology-at-issue in this case. ParkerVision also produced a presentation entitled “ParkerVision Board

Meeting August 26, 2008” that notes a planned meeting with “Infineon RF Chief Scientist (Bernd Adler)” in September 2008 to “present [a] business proposal in person.” The same slides note that ParkerVision’s intention for that in-person meeting “is to provide aggressive business proposal to push decision makers to action.” ParkerVision also produced an internal email from John Stuckey dated October 8, 2008 that states “Parker’s week 40 (9-29) meeting with Bernd Adler was successful. Waiting for follow-up from Bernd to (a) confirm 8WL test results, (b) schedule Lake Mary visit, (c) begin MOU discussions.” The same email states that “[d]ialog continuing with Infineon and Renesas – objective being to get them to Lake Mary for lab review and business discussions within the next 2-3 weeks.” Intel admits that Bernhard Straub sent an email dated October 10, 2008 to Zdravko Boos stating “Can we sit together to talk about a possible use of PV’s IP for our roadmap. I talked today to Bernd. I want to do this follow-up with you.” but denies any suggestion that Mr. Straub—the very “Business Development” executive Infineon directed John Stuckey of ParkerVision to “re-quote”—was proposing to discuss “use of PV’s IP” without permission. To the contrary, the documentary record and testimony to date show that ParkerVision had made a “business proposal” to Infineon just weeks earlier. Moreover, ParkerVision’s own documents show that Infineon told ParkerVision in January 2009 that “Bernd Adler does not think [ParkerVision’s] technology is viable compared to multi-band, multi-mode transceiver and PA [Power Amplifier] they [Infineon] intend to launch in 2010....” Thus, contrary to ParkerVision’s allegations, Infineon communicated to ParkerVision that its initial “quote/proposal was not realistic” and that Infineon did not think ParkerVision’s D2P transmitter technology was viable compared to Infineon’s independently developed technology. The documentary record and testimony to date show that Infineon considered and rejected multiple proposals from ParkerVision regarding technology unrelated to the technology-at-issue in this case and communicated those rejections to ParkerVision. Intel lacks knowledge or information sufficient to respond to

ParkerVision's remaining allegations in this paragraph, and therefore denies such allegations on that basis.

58. Intel admits that a document entitled "STEPS-Dialog 2008" for "Boos, Zdravko" lists "assessment of start up companies (Parker Vision, etc)" in the field "Targets and Responsibilities for FY 08/09." Intel admits that Zdravko Boos sent an email dated January 26, 2009 to Bernd Adler with the subject "Incentive." Mr. Adler testified about that document at his June 28, 2022 deposition and explained that Mr. Boos was "ask[ing] if he gets [a] special incentive because he got the multimode transmitter working" and asking if there was budget for such an incentive "[s]ince we didn't spend anything" on the "plan to [buy] Sequoia, plan to [buy] Staszewski brothers out of TI [or] employee McCune as IFX fellow or from the possible Parker Vision cooperation." The full context of the email thus makes clear that Infineon had rejected ParkerVision's D2P transmitter technology, not that Mr. Boos had requested funds for any ParkerVision project. Intel lacks knowledge or information sufficient to respond to ParkerVision's remaining allegations in this paragraph, and therefore denies such allegations on that basis.

59. Intel admits that Hubert Baierl sent an email dated February 6, 2009 to Zdravko Boos that states "I learned that you have taken a look into Parker Vision's technology=>What is your current conclusion?" Intel admits that Mr. Baierl sent a calendar invite to Mr. Boos on February 9, 2009 for a thirty-minute meeting on February 11, 2009. Intel also notes that ParkerVision produced a "Preliminary Statement of Work for Infineon" dated January 19, 2009 that states "ParkerVision is looking to purchase, from Infineon, a receiver solution that supports tri-band WCDMA/quad-band GSM/EDGE which will be integrated into a custom reference design for which we have existing customers." Contemporaneous ParkerVision documents reveal that ParkerVision sought to use Infineon transceivers because ParkerVision's own D2D receiver technology was not ready and was incapable of meeting the needs of a project for LG

Innotek. On information and belief, based on the documentary record, Mr. Hubert Baierl received emails related to ParkerVision's attempt to integrate its technology into an Infineon platform. Intel lacks knowledge or information sufficient to respond to ParkerVision's remaining allegations in this paragraph, and therefore denies such allegations on that basis.

60. Intel admits that Hubert Baierl sent an email dated February 11, 2009 to Zdravko Boos that states "FYI: Currently we have no NDA with ParkerVision." Intel admits that Zdravko Boos sent an email dated February 11 2009 to Bernd Adler that states "do we have NDA with Parker Vision?" Intel admits that Bernd Adler sent an email dated February 11 2009 to Zdravko Boos that states "Expired 31.12.2008 as far as I know. Bernhard Straub knows better." Intel lacks knowledge or information sufficient to respond to ParkerVision's remaining allegations in this paragraph, and therefore denies such allegations on that basis.

61. Intel admits that ParkerVision and Infineon entered into an NDA dated January 19, 2009. That January 19, 2009 NDA states "WHEREAS, the parties to this Agreement and their Affiliates intend to engage in discussions for the purpose of evaluating a possible business relationship between the parties regarding Infineon's RF Transceivers for possible use through integration with ParkerVision's RF solutions for resale." ParkerVision also produced a "Preliminary Statement of Work for Infineon" dated January 19, 2009 that states "ParkerVision is looking to purchase, from Infineon, a receiver solution that supports tri-band WCDMA/quad-band GSM/EDGE which will be integrated into a custom reference design for which we have existing customers." Based on the documentary record and testimony to date, including testimony from ParkerVision CEO Jeff Parker, Intel understands that ParkerVision's interest in Infineon transceivers in 2009 was related to a Joint Development Agreement between ParkerVision and LG Innotek ("LGIT"), announced December 4, 2008, under which ParkerVision would supply "unpackaged RFICs" that LGIT would incorporated into "multi-mode wireless modules for sale by LG Innotek," specifically "multi-mode, multi-band HEDGE

module[s] supporting GSM, EDGE, WCDMA and HSPA standards with a targeted product launch in the second half of 2009.” ParkerVision sought to use Infineon transceivers because ParkerVision’s own D2D receiver technology was not ready and was incapable of meeting the needs of LGIT. Intel lacks knowledge or information sufficient to respond to ParkerVision’s remaining allegations in this paragraph, and therefore denies such allegations on that basis.

62. ParkerVision’s allegations again relate to ParkerVision’s request for Infineon technology, not to any interest by Infineon in ParkerVision technology. Based on the documentary record and testimony to date, including testimony from ParkerVision CEO Jeff Parker, Intel understands that ParkerVision was working on a “D2P HEDGE Prototype System” code named “Panther” in 2009 as part of its project for LGIT. Based on a contemporaneous ParkerVision “Product Definition Document,” the “Panther” system attempted to use an existing Infineon chipset—including an Infineon PMB8878 baseband integrated circuit, a PMB6921 power management IC, and a PMB6952 transceiver (aka “SMARTi™ 3GE”) integrated circuit—with ParkerVision’s D2P transmitter technology. A contemporaneous ParkerVision document describes the “Panther” project as “[o]f critical importance” to the “prime customer, LG Innotek (LGIT) and their potential customers to retain and obtain commercial interest.” Another contemporaneous ParkerVision document, however, describes [REDACTED]

[REDACTED] The same contemporaneous ParkerVision document, revised November 9, 2009 and “commissioned by CEO (Jeffrey Parker)”, states that [REDACTED]

Meanwhile, on November 10, 2009—the following day—ParkerVision issued a supplement to a September 14, 2009 prospectus offering 8,000,000 shares of common stock for sale at \$2.00 per share. The November 10, 2009 Prospectus Supplement says the following about

ParkerVision's agreement with LG Innotek while saying nothing about [REDACTED] [REDACTED] described in ParkerVision's internal documents: "On December 4, 2008, we entered into a Product and Marketing Development Agreement (the 'LGI Agreement') with LG Innotek Co., Ltd. ('LGI'), a division of the LG Group. Under the terms of the LGI Agreement, we will work cooperatively with LGI to develop and market RF modules that incorporate our technologies for use in mobile handset and data card applications. Under this agreement, we will supply LGI with tested, unpackaged integrated circuits under a supply agreement, the terms of which will be finalized as part of the development planning with LGI. The modules are being designed for commercial HEDGE applications. HEDGE is an acronym for applications that incorporate support for 2G, 2.5G and 3G waveform standards including GSM, EDGE, WCDMA, and HSPA." The very next week, on November 16, 2009, ParkerVision closed an offering for sales of 8,000,000 sales for common stock for aggregate gross proceeds of \$16 million, according to ParkerVision's Form 10-K for the year ending December 31, 2009. Moreover, according to the testimony of ParkerVision CEO Jeff Parker, ParkerVision ended altogether its efforts to work with LG Innotek in the beginning of 2010. Intel lacks knowledge or information sufficient to respond to ParkerVision's remaining allegations in this paragraph, and therefore denies such allegations on that basis.

63. Intel admits that individuals at Infineon received a document entitled "Skyworks Solutions presents for acquisition The Mobile Transceiver Patent Portfolio I" in June 2010. Intel denies that that Skyworks document identified seventy-four ParkerVision patents "as being the dominant patents in RF architecture." To the contrary, the Skyworks document merely lists ParkerVision patents—in a font size that is not human-readable—as patents that cite two Skyworks patents. At most, that indicates the priority and relevance of the Skyworks patents, not the later-filed ParkerVision patents. Because the font-size of the ParkerVision patent numbers is not human-readable, Intel denies that any recipient of this

Skyworks document would have gained knowledge of ParkerVision's patents, let alone the patents-at-issue in this case. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

64. Intel admits that Intel acquired assets related to Infineon's wireless business in January 2011, including employees and cellular modem technology, including cellular baseband, transceiver, and power management technology. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

65. Intel admits that Zdravko Boos and Bernd Adler became Intel employees as part of Intel's acquisition of Infineon's wireless business. Werner Schelmbauer, not Mr. Boos or Mr. Adler, designed the receiver technology at issue in this case. Mr. Schelmbauer designed the circuits at issue without knowledge of any ParkerVision patent or technology. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

66. Intel admits that ParkerVision has produced documents that purport to track certain information about visits to the ParkerVision website. But none of the locations identified in ParkerVision's allegations were Infineon or Intel locations that were involved in the design of the accused SMARTi products, and none of the topics listed in ParkerVision's allegations relates to the receiver technology accused in this case. In addition, none of the documents produced by ParkerVision mention any ParkerVision patent. Intel lacks knowledge or information sufficient to respond to ParkerVision's remaining allegations in this paragraph, and therefore denies such allegations on that basis.

67. Intel admits that ParkerVision filed an Application for Issuance of Subpoena *Duces Tecum* and Subpoena *Ad Testificandum* to Intel Corp. in Certain RF Capable Integrated Circuits and Products Containing the Same (ITC, Inv. No. 337-TA-982). Intel admits that ParkerVision's ITC subpoena sought documents and testimony related to SMARTi™ 5 and that Intel produced and/or made available for inspection technical documents and schematics

for SMARTi™ 5 and provided a witness who testified about the design and operation of SMARTi™ 5. Intel denies that ParkerVision’s ITC subpoena to Intel provided actual notice of alleged infringement of any ParkerVision patent, as the ALJ in the ITC Investigation found that “ParkerVision states it has never accused the Intel-based iPhones of infringement....” *In re Certain RF Capable Integrated Circuits and Products Containing the Same*, Investigation No. 337-TA-982, Order No 14 (Aug. 4, 2016) at 6. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

68. Admitted.

69. Admitted.

70. Intel admits that Daniel Schwartz worked as a Radio Architect at Intel and was involved in the design of the SMARTi™ 7. Intel admits that Mr. Schwartz provided documents and schematics related to the SMARTi™ 5 to Intel’s legal team shortly after Intel received ParkerVision’s ITC subpoena. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

71. Intel admits that ParkerVision amended its complaint for patent infringement against Apple Inc. in the Munich Regional Court in Germany in February 2017 to allege that the SMARTi™ 5 based iPhone infringes ParkerVision’s European Patent No. 1 135 853 (“EP ‘853”). The Munich Regional Court subsequently determined that Intel’s SMARTi™ 5 does not infringe EP ‘853, which is a closely related patent to the patents-at-issue. *See* Munich Regional Court, 7 O 2141/17, Final Judgment (trans.) (Ger.) at 19, Apr. 25, 2019. The Munich Regional Court also ordered plaintiff ParkerVision GmbH to bear the costs of the legal proceedings. *See id.* at 2. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

72. Intel admits that its engineers provided information used to defend against ParkerVision’s baseless claim that the Intel SMARTi™ 5 infringes EP ‘853. Intel denies that

Intel's SMARTi™ 5 infringes any ParkerVision patent. In fact, the Munich Regional Court subsequently determined that Intel's SMARTi™ 5 does not infringe EP '853 which is a closely related patent to the patents-at-issue. *See* Munich Regional Court, 7 O 2141/17, Final Judgment (trans.) (Ger.) at 19, Apr. 25, 2019. The Munich Regional Court also ordered plaintiff ParkerVision GmbH to bear the costs of the legal proceedings. *See id.* at 2. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

73. Denied.

74. Intel admits that EP853 claims priority to the applications that led to the issuance of U.S. Patent Nos. 6,687,493; 6,049,706; 6,580,902; 6,560,301; and 6,061,551. Intel denies that U.S. patent Nos. 6,687,493; 6,049,706; 6,580,902; 6,560,301; and 6,061,551 are listed on the face of EP853. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

75. Intel denies that Intel knew of each of the patents-at-issue before ParkerVision filed this suit. Intel admits that ParkerVision's ITC subpoena referred to the '528 patent-at-issue, but denies that ParkerVision's ITC subpoena to Intel provided actual notice of alleged infringement of any ParkerVision patent, as the ALJ in the ITC Investigation found that "ParkerVision states it has never accused the Intel-based iPhones of infringement...." *In re Certain RF Capable Integrated Circuits and Products Containing the Same*, Investigation No. 337-TA-982, Order No 14 (Aug. 4, 2016) at 6. Intel denies that Intel or Intel employees "continual[ly] monitor[ed]" ParkerVision's technologies, denies that ParkerVision has "inventive technology and patents," and denies that ParkerVision communicated with Intel about its patents. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

76. Intel denies that it uses or has ever used ParkerVision's technology and denies that its SMARTi™ 4, 5, 6T, 7, and 8 products infringe any of the ParkerVision patents-at-issue.

Intel denies that ParkerVision has “groundbreaking” IP, as ParkerVision alleges. To the contrary, Intel documents including the Shmuel Ravid November 6, 2007 email discussed above make clear that ParkerVision’s claims to have developed “groundbreaking IP” never materialized. The Intel receiver technology-at-issue was designed by Werner Schelmbauer, a former Infineon engineer who joined Intel in January 2011, and who had no contact with ParkerVision and has no knowledge of any ParkerVision patent or technology. Moreover, the independently developed receiver technology in Intel’s SMARTi™ 5 transceivers, which is at issue in this case, has already been found not to infringe a ParkerVision European patent that ParkerVision admits is related to the ParkerVision patents-at-issue in this case. ParkerVision’s allegations of willful infringement are therefore baseless, and Intel reserves all rights, including the right to seek attorneys’ fees and sanctions, should ParkerVision pursue claims for willful infringement. Intel also denies that any SMARTi chip uses “energy transfer technology” or infringes any ParkerVision patent, or that any such technology was incorporated into Intel Wi-Fi chips, which also do not infringe any ParkerVision patent. To the extent a further response is required, Intel denies any remaining allegations in this paragraph.

THE ASSERTED PATENTS

United States Patent No. 6,580,902

77. Intel admits that U.S. Patent No. 6,580,902 (the “‘902 patent”) is entitled “Frequency Translation Using Optimized Switch Structures” and was issued on June 17, 2003, but denies that it is a valid or duly and legally issued patent. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

78. This paragraph states legal conclusions to which no response is required. To the extent a further response is required, Intel denies that the ‘902 patent is valid and enforceable, and further denies all remaining allegations in this paragraph.

79. Intel lacks knowledge or information sufficient to respond to ParkerVision's allegations in this paragraph, and therefore denies such allegations on that basis.

United States Patent No. 7,539,474

80. Intel admits that U.S. Patent No. 7,539,474 (the "'474 patent") is entitled "DC Offset, Re-Radiation, and I/Q Solutions Using Universal Frequency Translation Technology" and was issued on May 26, 2009, but denies that it is a valid or duly and legally issued patent. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

81. This paragraph states legal conclusions to which no response is required. To the extent a further response is required, Intel denies that the '474 patent is valid and enforceable, and further denies all remaining allegations in this paragraph.

82. Intel lacks knowledge or information sufficient to respond to ParkerVision's allegations in this paragraph, and therefore denies such allegations on that basis.

United States Patent No. 8,588,725

83. Intel admits that U.S. Patent No. 8,588,725 (the "'725 patent") is entitled "Apparatus, System, and Method for Down Converting and Up-Converting Electromagnetic Signals" and was issued on November 19, 2013, but denies that it is a valid or duly and legally issued patent. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

84. This paragraph states legal conclusions to which no response is required. To the extent a further response is required, Intel denies that the '725 patent is valid and enforceable, and further denies all remaining allegations in this paragraph.

85. Intel lacks knowledge or information sufficient to respond to ParkerVision's allegations in this paragraph, and therefore denies such allegations on that basis.

United States Patent No. 9,118,528

86. Intel admits that U.S. Patent No. 9,118,528 (the “‘528 patent”) is entitled “Method and System for Down-Converting an Electromagnetic Signal, and Transforms for Same, and Aperture Relationships” and was issued on August 25, 2015, but denies that it is a valid or or duly and legally issued patent. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

87. This paragraph states legal conclusions to which no response is required. To the extent a further response is required, Intel denies that the ‘528 patent is valid and enforceable, and further denies all remaining allegations in this paragraph.

88. Intel lacks knowledge or information sufficient to respond to ParkerVision’s allegations in this paragraph, and therefore denies such allegations on that basis.

United States Patent No. 9,246,736

89. Intel admits that U.S. Patent No. 9,246,736 (the “‘736 patent”) is entitled “Method and System for Down-Converting an Electromagnetic Signal” and was issued on January 26, 2016, but denies that it is a valid or duly and legally issued patent. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

90. This paragraph states legal conclusions to which no response is required. To the extent a further response is required, Intel denies that the ‘736 patent is valid and enforceable, and further denies all remaining allegations in this paragraph.

91. Intel lacks knowledge or information sufficient to respond to ParkerVision’s allegations in this paragraph, and therefore denies such allegations on that basis.

United States Patent No. 9,444,673

92. Intel admits that U.S. Patent No. 9,444,673 (the “‘673 patent”) is entitled “Methods and Systems for Down-Converting a Signal Using a Complementary Transistor Structure” and was issued on September 13, 2016, but denies that it is a valid or duly and

legally issued patent. Intel denies that the '673 patent is attached as Exhibit 10 to ParkerVision's Third Amended Complaint, as no Exhibits were filed with the Third Amended Complaint. To the extent any other response to the allegations in this paragraph is required, Intel denies such allegations.

93. This paragraph states legal conclusions to which no response is required. To the extent a further response is required, Intel denies that the '673 patent is valid and enforceable, and further denies all remaining allegations in this paragraph.

94. Intel lacks knowledge or information sufficient to respond to ParkerVision's allegations in this paragraph, and therefore denies such allegations on that basis.

CLAIMS FOR RELIEF

COUNT I – Alleged Infringement of United States Patent No. 6,580,902

95. Intel repeats and incorporates its Answers to paragraphs 1 to 94 as though fully set forth herein.

96. Intel denies each and every allegation in paragraph 96.

97. Intel denies each and every allegation in paragraph 97.

98. This paragraph, which merely parrots language directly from the claims and specification of the '902 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '902 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

99. This paragraph, which merely parrots language directly from the claims and specification of the '902 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '902 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

100. This paragraph, which merely parrots language directly from the claims and specification of the '902 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '902 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

101. This paragraph, which merely parrots language directly from the claims and specification of the '902 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '902 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

102. Intel denies each and every allegation in paragraph 102.

103. Intel denies each and every allegation in paragraph 103.

104. Intel denies each and every allegation in paragraph 104.

COUNT II – Alleged Infringement of United States Patent No. 7,539,474

105. Intel repeats and incorporates its Answers to paragraphs 1 to 104 as though fully set forth herein.

106. Intel denies each and every allegation in paragraph 106.

107. Intel denies each and every allegation in paragraph 107.

108. This paragraph, which merely parrots language directly from the claims and specification of the '474 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '474 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

109. This paragraph, which merely parrots language directly from the claims and specification of the '474 patent and makes no effort to address the actual functioning of Intel's

products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '474 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

110. This paragraph, which merely parrots language directly from the claims and specification of the '474 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '474 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

111. Intel denies each and every allegation in paragraph 111.

112. Intel denies each and every allegation in paragraph 112.

COUNT VI – Alleged Infringement of United States Patent No. 8,588,725

113. Intel repeats and incorporates its Answers to paragraphs 1 to 113 as though fully set forth herein.

114. Intel denies each and every allegation in paragraph 114.

115. Intel denies each and every allegation in paragraph 115.

116. This paragraph, which merely parrots language directly from the claims and specification of the '725 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '725 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

117. This paragraph, which merely parrots language directly from the claims and specification of the '725 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '725 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

118. Intel denies each and every allegation in paragraph 118.

119. Intel denies each and every allegation in paragraph 119.

COUNT IV – Alleged Infringement of United States Patent No. 9,118,528

120. Intel repeats and incorporates its Answers to paragraphs 1 to 120 as though fully set forth herein.

121. Intel denies each and every allegation in paragraph 121.

122. Intel denies each and every allegation in paragraph 122.

123. This paragraph, which merely parrots language directly from the claims and specification of the ‘528 patent and makes no effort to address the actual functioning of Intel’s products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the ‘528 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

124. This paragraph, which merely parrots language directly from the claims and specification of the ‘528 patent and makes no effort to address the actual functioning of Intel’s products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the ‘528 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

125. This paragraph, which merely parrots language directly from the claims and specification of the ‘528 patent and makes no effort to address the actual functioning of Intel’s products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the ‘528 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

126. This paragraph, which merely parrots language directly from the claims and specification of the ‘528 patent and makes no effort to address the actual functioning of Intel’s products, states legal conclusions to which no response is required. Intel denies that it infringes

any valid and enforceable claim of the '528 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

127. This paragraph, which merely parrots language directly from the claims and specification of the '528 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '528 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

128. This paragraph, which merely parrots language directly from the claims and specification of the '528 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '528 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

129. Intel denies each and every allegation in paragraph 129.

130. Intel denies each and every allegation in paragraph 130.

COUNT V – Alleged Infringement of United States Patent No. 9,246,736

131. Intel repeats and incorporates its Answers to paragraphs 1 to 131 as though fully set forth herein.

132. Intel denies each and every allegation in paragraph 132.

133. Intel denies each and every allegation in paragraph 133.

134. This paragraph, which merely parrots language directly from the claims and specification of the '736 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '736 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

135. This paragraph, which merely parrots language directly from the claims and specification of the '736 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '736 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

136. This paragraph, which merely parrots language directly from the claims and specification of the '736 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '736 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

137. This paragraph, which merely parrots language directly from the claims and specification of the '736 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '736 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

138. This paragraph, which merely parrots language directly from the claims and specification of the '736 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '736 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

139. This paragraph, which merely parrots language directly from the claims and specification of the '736 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '736 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

140. This paragraph, which merely parrots language directly from the claims and specification of the '736 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '736 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

141. This paragraph, which merely parrots language directly from the claims and specification of the '736 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '736 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

142. Intel denies each and every allegation in paragraph 142.

143. Intel denies each and every allegation in paragraph 143.

COUNT X – Alleged Infringement of United States Patent No. 9,444,673

144. Intel repeats and incorporates its Answers to paragraphs 1 to 144 as though fully set forth herein.

145. Intel denies each and every allegation in paragraph 145.

146. Intel denies each and every allegation in paragraph 146.

147. This paragraph, which merely parrots language directly from the claims and specification of the '673 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '673 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

148. This paragraph, which merely parrots language directly from the claims and specification of the '673 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes

any valid and enforceable claim of the '673 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

149. This paragraph, which merely parrots language directly from the claims and specification of the '673 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '673 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

150. This paragraph, which merely parrots language directly from the claims and specification of the '673 patent and makes no effort to address the actual functioning of Intel's products, states legal conclusions to which no response is required. Intel denies that it infringes any valid and enforceable claim of the '673 patent. To the extent a further response is required to any allegations in this paragraph, Intel denies such allegations.

151. Intel denies each and every allegation in paragraph 151.

152. Intel denies each and every allegation in paragraph 152.

JURY DEMANDED

Intel demands a trial by jury on all issues so triable.

RESPONSE TO PRAYER FOR RELIEF

Intel denies that it has infringed any asserted patent, directly or indirectly. Intel denies that ParkerVision is entitled to any of the grounds for relief enumerated in the Third Amended Complaint or any other relief, and respectfully requests that the Court enter judgment against ParkerVision on each of ParkerVision's claims. To the extent the Prayer for Relief includes any factual allegations, Intel denies those allegations.

AFFIRMATIVE AND OTHER DEFENSES

WHEREFORE, having answered ParkerVision's Third Amended Complaint, Intel asserts the following defenses set forth below. By pleading these defenses, Intel does not concede that it has the burden of proof as to any of them.

Intel reserves the right to allege additional affirmative defenses that become known through the course of discovery.

FIRST DEFENSE: FAILURE TO STATE A CLAIM

153. The Third Amended Complaint, and each purported claim for relief asserted therein, fails to state a claim upon which relief can be granted.

SECOND DEFENSE: NON-INFRINGEMENT

154. Intel does not make, use, test, sell, offer for sale, or import into the United States, and has not made, used, tested, sold, offered for sale or imported into the United States, any products or methods that infringe any valid and enforceable claim of the '902, '474, '725, '528, '736, and '673 patents, either directly or indirectly, literally or through the doctrine of equivalents, or otherwise.

THIRD DEFENSE: INVALIDITY

155. One or more claims of the '902, '474, '725, '528, '736, and '673 patents are invalid for failure to meet the conditions of patentability and/or otherwise comply with one or more provisions of 35 U.S.C. §§ 102, 103, 112, and/or 116.

FOURTH DEFENSE: UNENFORCEABILITY

156. The '902, '474, '725, '528, '736, and '673 patents, and the claims therein, are unenforceable against Intel.

FIFTH DEFENSE: EQUITABLE ESTOPPEL, WAIVER, ACQUIESCENCE,

UNCLEAN HANDS

157. ParkerVision’s claims for relief are barred, in whole or in part, under principles of equity, including but not limited to estoppel, waiver, acquiescence, and/or unclean hands. For example, ParkerVision has engaged in serial litigation in which it has unsuccessfully asserted these and related patents against multiple parties, including against Intel’s SMARTi™ chip products that ParkerVision has also accused of infringement in this case. In Germany, courts have found Intel chips at issue here do not infringe the EP ‘853 patent, which is a closely related patent to the patents-at-issue, and also determined that the EP ‘853 patent would likely have been found invalid. *See* Munich Regional Court, 7 O 241/17, Final Judgement (trans.) (Ger.) at 19, Apr. 25, 2019; *see also* Bundespatentgericht [BPatG] [Federal Patent Court], 5 Ni 19/17 (EP), Decision on Costs and Determination of the Value in Dispute (Ger.) (trans.) at 10, 15, Dec. 16, 2019. In light of ParkerVision’s serial and unsuccessful patent litigation campaign, ParkerVision’s claims should therefore be barred, in whole or in part, under the principles of equity, including the doctrine of unclean hands.

158. As a further example, in 2011, MaxTak Capital Advisors, LLC, MaxTak Partners LP, and David Greenbaum sued ParkerVision for fraud, alleging that ParkerVision “made numerous public statements omitting material facts and deliberately misrepresenting: (a) d2p’s [i.e., ParkerVision’s ‘direct-to-power’ technology] effectiveness and value; (b) the interest expressed by OEMs and other manufacturers in developing and commercializing products integrating d2p technology; (c) ParkerVision’s financial results; and (d) the Company’s prospects for developing profitable sales of its d2p technology.” *See MaxTak Capital Advisors, et al. v. ParkerVision, Inc., et al.*, Case No. 2:11-cv-07549, D.I. 1 ¶ 33 (D.N.J. Dec. 28, 2011). On information and belief, ParkerVision has likewise misrepresented its RF technology in its Complaint, First Amended Complaint, Second Amended Complaint, and Third Amended Complaint in this case, and ParkerVision’s claims should therefore be barred, in whole or in part, under the principles of equity, including the doctrine of unclean hands.

SIXTH DEFENSE: PROSECUTION HISTORY ESTOPPEL AND DISCLAIMER

159. ParkerVision is estopped, based on statements, representations, and admissions made during prosecution of the patent applications that led to the '902, '474, '725, '528, '736, and '673 patents from asserting that the claims of the aforementioned patents are infringed by Intel or Intel's products, services, including the doctrine of equivalents.

SEVENTH DEFENSE: LIMITATION ON DAMAGES

160. ParkerVision's claims for monetary damages are limited by the statute of limitations and/or limited to acts of infringement occurring within six years of the date of initiating this suit under 35 U.S.C. § 286.

EIGHTH DEFENSE: FAILURE TO MARK

161. To the extent ParkerVision, its predecessors, or licensees of any asserted patent failed to comply with the marking requirements set forth in 35 U.S.C. § 287, the relief sought by ParkerVision is barred, in whole or in part.

COUNTERCLAIMS TO THIRD AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Counterclaim Plaintiff Intel Corporation ("Intel") alleges the following Counterclaims in response to Counterclaim Defendant ParkerVision, Inc.'s ("ParkerVision") Third Amended Complaint (D.I. 146) for patent infringement.

THE PARTIES

1. Counterclaim Plaintiff Intel is a corporation organized and existing under the laws of the State of Delaware, with a place of business at 2200 Mission College Boulevard, Santa Clara, California 95054.

2. Counterclaim Defendant ParkerVision alleges in its Third Amended Complaint that it is a Florida corporation with its principal place of business at 4446-1A Hendricks Avenue, Suite 354, Jacksonville, Florida 32207.

JURISDICTION AND VENUE

3. These Counterclaims arise under Title 35 of the United States Code. The Court has subject matter jurisdiction over these Counterclaims pursuant to 28 U.S.C. §§ 1331, 1338(a), 2201, and 2202.

4. ParkerVision is subject to personal jurisdiction in this District because ParkerVision filed its Complaint, First Amended Complaint, Second Amended Complaint, and Third Amended Complaint in this District.

5. Venue is proper in this District because ParkerVision filed its Complaint, First Amended Complaint, Second Amended Complaint, and Third Amended Complaint in this District.

FACTUAL BACKGROUND

6. In this Third Amended Complaint, ParkerVision alleges that it is the owner of U.S. Patent Nos. 6,580,902 (“‘902 patent”); 7,539,474 (“‘474 patent”); 8,588,725 (“‘725 patent”); 9,118,528 (“‘528 patent”); 9,246,736 (“‘736 patent”); and 9,444,673 (“‘673 patent”).

7. In its Third Amended Complaint, ParkerVision alleges that Intel’s PMB 5750, PMB 5757, and PMB 5762 (collectively, the “RF Transceiver Chips”) infringe the ‘902, ‘474, ‘725, ‘528, ‘736, and ‘673 patents.

8. Intel denies each and every such infringement allegation.

9. As a result of ParkerVision’s actions and statements, including the filing of the Third Amended Complaint, an actual and justiciable controversy exists between ParkerVision and Intel with regard to the validity and infringement of the ‘902, ‘474, ‘725, ‘528, ‘736, and ‘673 patents.

10. A judicial determination is necessary and appropriate at this time given ParkerVision’s allegations against Intel and in order for Intel to ascertain its rights and duties with respect to the ‘902, ‘474, ‘725, ‘528, ‘736, and ‘673 patents.

FIRST COUNTERCLAIM

(Declaratory Judgment of Non-Infringement of U.S. Patent No. 6,580,902)

11. Intel repeats and re-alleges each and every allegation set forth in the foregoing Paragraphs as if fully set forth herein.

12. Intel counterclaims against ParkerVision pursuant to the patent laws of the United States, Title 35 of the United States Code, and the Declaratory Judgments Act, 28 U.S.C. §§ 2201 and 2202.

13. In its Third Amended Complaint, ParkerVision alleges that Intel is directly infringing, literally and/or under the doctrine of equivalents, the '902 patent, and that the '902 patent is valid and enforceable.

14. An actual controversy exists between ParkerVision and Intel by virtue of the allegations in ParkerVision's Third Amended Complaint and Intel's Answer as to the validity and infringement of the '902 patent.

15. The RF Transceiver Chips, including the accused Intel PMB 5750, PMB 5757, and PMB 5762, do not meet all of the elements of any of the claims of the '902 patent, and therefore Intel does not infringe the claims of the '902 patent.

16. For example, Intel does not infringe at least Claim 1 of the '902 patent because the RF Transceiver Chips, including the accused Intel PMB 5750, PMB 5757, and PMB 5762, do not use, include, and/or incorporate a circuit for down-converting an electromagnetic signal, comprising at least one or more of the following limitations: (i) an energy transfer module having a switch having a switch module and an energy storage module, said energy transfer module sampling the electromagnetic signal at an energy transfer rate, according to an energy transfer signal, to obtain sampled energy, said sampled energy being stored by said energy storage module, a down-converted signal being generated from said sampled energy, wherein (ii) said energy transfer module further comprises: (iii) transistors coupled together, said transistors having a common first port, a common second port, and a common control port,

wherein the electromagnetic signal is accepted at said common first port and said sampled energy is present at said common second port, and further wherein said common control port accepts said energy transfer signal, said energy transfer signal having a control frequency that is substantially equal to said energy transfer rate, and (iv) wherein each of said transistors has a drain, a source, and a gate, and said common first port couples together drains of said transistors, said common second port couples together sources of said transistors, and said common control port couples together gates of said transistors.

17. Moreover, the PMB 5750 chip that ParkerVision accuses of infringement in its Third Amended Complaint was already found not to infringe European Patent No. 1 135 853 (“EP ‘853”) in a proceeding in Germany at least because “there is no sampling means according to the patent.” *See* Munich Regional Court, 7 O 2141/17, Final Judgment (trans.) (Ger.) at 19, Apr. 25, 2019. The EP ‘853 patent claims priority to U.S. Application No. 09/293095 that led to the ‘902 patent, and, like Claim 1 of the ‘902 patent, includes claims that require “sampling.” *See id.* at 4 (“[A] sampling means for sampling the input signal at a sampling frequency....”).

18. Intel does not infringe the ‘902 patent because Intel does not make, use, test, sell, offer for sale, or import into the United States, and has not made, used, tested, sold, offered for sale, or imported into the United States, any products or methods that infringe any valid claim of the ‘902 patent, either directly or indirectly, literally or through the doctrine of equivalents, or otherwise.

19. Intel is entitled to a declaratory judgment that it has not infringed, and is not infringing, directly or indirectly (either literally, under the doctrine of equivalents, or otherwise) any valid, patent-eligible claim of the ‘902 patent.

SECOND COUNTERCLAIM

(Declaratory Judgment of Invalidity of U.S. Patent No. 6,580,902)

20. Intel repeats and re-alleges each and every allegation set forth in the foregoing Paragraphs as if fully set forth herein.

21. Intel counterclaims against ParkerVision pursuant to the patent laws of the United States, Title 35 of the United States Code, and the Declaratory Judgments Act, 28 U.S.C. §§ 2201 and 2202.

22. In its Third Amended Complaint, ParkerVision alleges that Intel is directly infringing, literally and/or under the doctrine of equivalents, the ‘902 patent, and that the ‘902 patent is valid and enforceable.

23. An actual controversy exists between ParkerVision and Intel by virtue of the allegations in ParkerVision’s Third Amended Complaint and Intel’s Answer as to the validity and infringement of the ‘902 patent.

24. Intel contests the validity and enforceability of the ‘902 patent, and does not infringe the ‘902 patent at least because the claims of the ‘902 patent are invalid under 35 U.S.C. §§ 102, 103, 112, and/or 116.

25. For example, U.S. Patent No. 6,230,000 (“Tayloe”) in combination with “Practical RF Design Manual” (1982) by Doug DeMaw (“DeMaw”) renders obvious, including at least under ParkerVision’s alleged infringement theory, at least Claim 1 of the ‘902 patent under 35 U.S.C. § 103. At least under ParkerVision’s apparent infringement theory, Tayloe discloses and/or renders obvious every element of Claim 1. To the extent ParkerVision contends that Tayloe does not disclose transistors coupled together with common drain, source, and gate ports, wherein the common drain ports receive an input signal and common source ports output a down-converted signal and common control gates receive a control signal, those elements are disclosed and/or rendered obvious by at least DeMaw. Intel has provided final invalidity contentions consistent with the schedule ordered by the Court and following ParkerVision’s final infringement contentions.

26. Similarly, the German Federal Patent Court found that all elements of ParkerVision's related EP '853 patent are disclosed in the prior art article *A 900-MHz RF Front-End with Integrated Discrete-Time Filtering*, IEEE J. of Solid-State Circuits, Band 31, Nr. 12 (Dec. 1996) by Shen, D. H., et al., ("Shen"), and rejected ParkerVision's argument that it invented a "fundamentally different approach to energy transmission down-conversion." See Bundespatentgericht [BPatG] [Federal Patent Court], 5 Ni 19/17 (EP), Decision on Costs and Determination of the Value in Dispute (Ger.) (trans.) at 10, Dec. 16, 2019. The EP '853 patent claims priority to U.S. Application No. 09/293095 that led to the '902 patent, and, like the '902 patent, also claims priority to the U.S. Application No. 09/176,022. Further, like Claim 1 of the '902 patent, the EP '853 patent includes claims that require "sampling." See Munich Regional Court, 7 O 2141/17, Final Judgment (trans.) (Ger.) at 4, Apr. 25, 2019. Shen likewise discloses and/or renders obvious the elements of at least Claim 1 of the '902 patent, and therefore invalidates that claim. Intel has provided final invalidity contentions consistent with the schedule ordered by the Court and following ParkerVision's final infringement contentions.

27. Intel is entitled to a declaratory judgment that the claims of the '902 patent are invalid, including, without limitation, under 35 U.S.C. §§ 102, 103, 112, and/or 116.

THIRD COUNTERCLAIM

(Declaratory Judgment of Non-Infringement of U.S. Patent No. 7,539,474)

28. Intel repeats and re-alleges each and every allegation set forth in the foregoing Paragraphs as if fully set forth herein.

29. Intel counterclaims against ParkerVision pursuant to the patent laws of the United States, Title 35 of the United States Code, and the Declaratory Judgments Act, 28 U.S.C. §§ 2201 and 2202.

30. In its Third Amended Complaint, ParkerVision alleges that Intel is directly infringing, literally and/or under the doctrine of equivalents, the '474 patent, and that the '474 patent is valid and enforceable.

31. An actual controversy exists between ParkerVision and Intel by virtue of the allegations in ParkerVision's Third Amended Complaint and Intel's Answer as to the validity and infringement of the '474 patent.

32. The RF Transceiver Chips, including the accused Intel PMB 5750, PMB 5757, and PMB 5762, do not meet all of the elements of any of the claims of the '474 patent, and therefore Intel does not infringe the claims of the '474 patent.

33. For example, Intel does not infringe at least Claim 1 of the '474 patent because the RF Transceiver Chips, including the accused Intel PMB 5750, PMB 5757, and PMB 5762, do not use, include, and/or incorporate an apparatus for down-converting an input signal, comprising at least one or more of the following limitations: (i) a first frequency down-conversion module that receives an input signal, wherein the first frequency down-conversion module down-converts the input signal according to a first control signal and outputs a first down-converted signal; (ii) a second frequency down-conversion module that receives the input signal, wherein the second frequency down-conversion module down-converts the input signal according to a second control signal and outputs a second down-converted signal; and (iii) a combining module that combines the second down-converted signal with the first down-converted signal and outputs a single channel down-converted signal; (iv) wherein the first frequency down-conversion module comprises a first switch and a first storage element, wherein the first switch is coupled to the first storage element at a first node and coupled to a first reference potential; and (v) wherein the second frequency down-conversion module comprises a second switch and a second storage element, wherein the second switch is coupled to the second storage element at a second node and coupled to a second reference potential.

34. Moreover, the PMB 5750 chip that ParkerVision accuses of infringement in its Third Amended Complaint was already found not to infringe European Patent No. 1 135 853 (“EP ‘853”) in a proceeding in Germany at least because “there is no sampling means according to the patent.” *See* Munich Regional Court, 7 O 2141/17, Final Judgment (trans.) (Ger.) at 19, Apr. 25, 2019. The EP ‘853 patent claims priority to U.S. Patent No. 6,061,551 (“‘551 patent”), and the ‘474 patent expressly incorporates by reference the ‘551 patent. Accordingly, Intel does not infringe the claims of the ‘474 patent for at least the same reasons that PMB 5750 was found not to infringe the EP ‘853 patent.

35. Intel does not infringe the ‘474 patent because Intel does not make, use, test, sell, offer for sale, or import into the United States, and has not made, used, tested, sold, offered for sale, or imported into the United States, any products or methods that infringe any valid claim of the ‘474 patent, either directly or indirectly, literally or through the doctrine of equivalents, or otherwise.

36. Intel is entitled to a declaratory judgment that it has not infringed, and is not infringing, directly or indirectly (either literally, under the doctrine of equivalents, or otherwise) any valid, patent-eligible claim of the ‘474 patent.

FOURTH COUNTERCLAIM

(Declaratory Judgment of Invalidity of U.S. Patent No. 7,539,474)

37. Intel repeats and re-alleges each and every allegation set forth in the foregoing Paragraphs as if fully set forth herein.

38. Intel counterclaims against ParkerVision pursuant to the patent laws of the United States, Title 35 of the United States Code, and the Declaratory Judgments Act, 28 U.S.C. §§ 2201 and 2202.

39. In its Third Amended Complaint, ParkerVision alleges that Intel is directly infringing, literally and/or under the doctrine of equivalents, the ‘474 patent, and that the ‘474 patent is valid and enforceable.

40. An actual controversy exists between ParkerVision and Intel by virtue of the allegations in ParkerVision’s Third Amended Complaint and Intel’s Answer as to the validity and infringement of the ‘474 patent.

41. Intel contests the validity and enforceability of the ‘474 patent, and does not infringe the ‘474 patent at least because the claims of the ‘474 patent are invalid under 35 U.S.C. §§ 102, 103, 112, and/or 116.

42. For example, “RF and Microwave Circuit Design for Wireless Communications” (1997) by Lawrence E. Larson (“Larson”) discloses every element of at least Claim 1 of the ‘474 patent and therefore anticipates and/or renders obvious, including at least under ParkerVision’s apparent infringement theory, at least Claim 1 of the ‘474 patent under 35 U.S.C. §§ 102, 103. Intel has provided final invalidity contentions consistent with the schedule ordered by the Court and following ParkerVision’s final infringement contentions.

43. Similarly, the German Federal Patent Court found that all elements of ParkerVision’s related EP ‘853 patent are disclosed in the prior art article *A 900-MHz RF Front-End with Integrated Discrete-Time Filtering*, IEEE J. of Solid-State Circuits, Band 31, Nr. 12 (Dec. 1996) by Shen, D. H., et al., (“Shen”), and rejected ParkerVision’s argument that it invented a “fundamentally different approach to energy transmission down-conversion.” See Bundespatentgericht [BPatG] [Federal Patent Court] 5 Ni 19/17 (EP), Decision on Costs and Determination of the Value in Dispute (Ger.) (trans.) at 10, Dec. 16, 2019. The EP ‘853 patent claims priority to U.S. Patent No. 6,061,551 (“‘551 patent”), and the ‘474 patent expressly incorporates by reference the ‘551 patent. Shen likewise discloses and/or renders obvious the elements of at least Claim 1 of the ‘474 patent, and therefore invalidates that claim. Intel has

provided final invalidity contentions consistent with the schedule ordered by the Court and following ParkerVision's final infringement contentions.

44. Intel is entitled to a declaratory judgment that the claims of the '474 patent are invalid, including, without limitation, under 35 U.S.C. §§ 102, 103, 112, and/or 116.

FIFTH COUNTERCLAIM

(Declaratory Judgment of Non-Infringement of U.S. Patent No. 8,588,725)

45. Intel repeats and re-alleges each and every allegation set forth in the foregoing Paragraphs as if fully set forth herein.

46. Intel counterclaims against ParkerVision pursuant to the patent laws of the United States, Title 35 of the United States Code, and the Declaratory Judgments Act, 28 U.S.C. §§ 2201 and 2202.

47. In its Third Amended Complaint, ParkerVision alleges that Intel is directly infringing, literally and/or under the doctrine of equivalents, the '725 patent, and that the '725 patent is valid and enforceable.

48. An actual controversy exists between ParkerVision and Intel by virtue of the allegations in ParkerVision's Third Amended Complaint and Intel's Answer as to the validity and infringement of the '725 patent.

49. The RF Transceiver Chips, including the accused Intel PMB 5750, PMB 5757, and PMB 5762, do not meet all of the elements of any of the claims of the '725 patent, and therefore Intel does not infringe the claims of the '725 patent.

50. For example, Intel does not infringe at least Claim 1 of the '725 patent because the RF Transceiver Chips, including the accused Intel PMB 5750, PMB 5757, and PMB 5762, do not use, include, and/or incorporate an apparatus for down-converting an electromagnetic signal, comprising at least one or more of the following limitations: (i) an aliasing module comprising a switching device and a storage module, the aliasing module receiving as an input

an RF information signal, and the aliasing module providing as an output a down-converted signal; (ii) the switching device of the aliasing module receiving as an input a control signal that controls a charging and discharging cycle of the storage module by controlling the switching device so that a portion of energy is transferred from the RF information signal to the storage module during a charging part of the cycle and a portion of the transferred energy is discharged during a discharging part of the cycle, wherein said control signal operates at an aliasing rate selected so that energy of the RF information signal is sampled and applied to the storage module at a frequency that is equal to or less than twice the frequency of the RF information signal; and (iii) wherein the storage module generates said down-converted signal from the alternate charging and discharging applied to the storage module using said control signal.

51. Moreover, the PMB 5750 chip that ParkerVision accuses of infringement in its Third Amended Complaint was already found not to infringe European Patent No. 1 135 853 (“EP ‘853”) in a proceeding in Germany at least because “there is no sampling means according to the patent.” *See* Munich Regional Court, 7 O 2141/17, Final Judgment (trans.) (Ger.) at 19, Apr. 25, 2019. The EP ‘853 patent claims priority to U.S. Patent No. 6,061,551 (“‘551 patent”), and the ‘725 patent expressly incorporates by reference the ‘551 patent. In addition, the EP ‘853 patent, like Claim 1 of the ‘725 patent, includes claims that require “sampling.” *See id.* at 4 (“[A] sampling means for sampling the input signal at a sampling frequency....”).

52. Intel does not infringe the ‘725 patent because Intel does not make, use, test, sell, offer for sale, or import into the United States, and has not made, used, tested, sold, offered for sale, or imported into the United States, any products or methods that infringe any valid claim of the ‘725 patent, either directly or indirectly, literally or through the doctrine of equivalents, or otherwise.

53. Intel is entitled to a declaratory judgment that it has not infringed, and is not infringing, directly or indirectly (either literally, under the doctrine of equivalents, or otherwise) any valid, patent-eligible claim of the ‘725 patent.

SIXTH COUNTERCLAIM

(Declaratory Judgment of Invalidity of U.S. Patent No. 8,588,725)

54. Intel repeats and re-alleges each and every allegation set forth in the foregoing Paragraphs as if fully set forth herein.

55. Intel counterclaims against ParkerVision pursuant to the patent laws of the United States, Title 35 of the United States Code, and the Declaratory Judgments Act, 28 U.S.C. §§ 2201 and 2202.

56. In its Third Amended Complaint, ParkerVision alleges that Intel is directly infringing, literally and/or under the doctrine of equivalents, the ‘725 patent, and that the ‘725 patent is valid and enforceable.

57. An actual controversy exists between ParkerVision and Intel by virtue of the allegations in ParkerVision’s Third Amended Complaint and Intel’s Answer as to the validity and infringement of the ‘725 patent.

58. Intel contests the validity and enforceability of the ‘725 patent, and does not infringe the ‘725 patent at least because the claims of the ‘725 patent are invalid under 35 U.S.C. §§ 102, 103, 112, and/or 116.

59. For example, U.S. Patent No. 6,230,000 (“Tayloe”) discloses every element of at least Claim 1 of the ‘725 patent and therefore anticipates and/or renders obvious, including at least under ParkerVision’s apparent infringement theory, at least Claim 1 of the ‘725 patent under 35 U.S.C. §§ 102, 103. Intel has provided final invalidity contentions consistent with the schedule ordered by the Court and following ParkerVision’s final infringement contentions.

60. Similarly, the German Federal Patent Court found that all elements of ParkerVision's related EP '853 patent are disclosed in the prior art article *A 900-MHz RF Front-End with Integrated Discrete-Time Filtering*, IEEE J. of Solid-State Circuits, Band 31, Nr. 12 (Dec. 1996) by Shen, D. H., et al., ("Shen"), and rejected ParkerVision's argument that it invented a "fundamentally different approach to energy transmission down-conversion." See Bundespatentgericht [BPatG] [Federal Patent Court] 5 Ni 19/17 (EP), Decision on Costs and Determination of the Value in Dispute (Ger.) (trans.) at 10, Dec. 16, 2019. The EP '853 patent claims priority to U.S. Patent No. 6,061,551 ("551 patent"), and the '725 patent expressly incorporates by reference the '551 patent. In addition, like Claim 1 of the '725 patent, the EP '853 patent includes claims that require "sampling." See Munich Regional Court, 7 O 2141/17, Final Judgment (trans.) (Ger.) at 4, Apr. 25, 2019. Shen likewise discloses and/or renders obvious the elements of at least Claim 1 of the '725 patent, and therefore invalidates that claim. Intel has provided final invalidity contentions consistent with the schedule ordered by the Court and following ParkerVision's final infringement contentions.

61. Intel is entitled to a declaratory judgment that the claims of the '725 patent are invalid, including, without limitation, under 35 U.S.C. §§ 102, 103, 112, and/or 116.

SEVENTH COUNTERCLAIM

(Declaratory Judgment of Non-Infringement of U.S. Patent No. 9,118,528)

62. Intel repeats and re-alleges each and every allegation set forth in the foregoing Paragraphs as if fully set forth herein.

63. Intel counterclaims against ParkerVision pursuant to the patent laws of the United States, Title 35 of the United States Code, and the Declaratory Judgments Act, 28 U.S.C. §§ 2201 and 2202.

64. In its Third Amended Complaint, ParkerVision alleges that Intel is directly infringing, literally and/or under the doctrine of equivalents, the '528 patent, and that the '528 patent is valid and enforceable.

65. An actual controversy exists between ParkerVision and Intel by virtue of the allegations in ParkerVision's Third Amended Complaint and Intel's Answer as to the validity and infringement of the '528 patent.

66. The RF Transceiver Chips, including the accused Intel PMB 5750, PMB 5757, and PMB 5762, do not meet all of the elements of any of the claims of the '528 patent, and therefore Intel does not infringe the claims of the '528 patent.

67. For example, Intel does not infringe at least Claim 1 of the '528 patent because the RF Transceiver Chips, including the accused Intel PMB 5750, PMB 5757, and PMB 5762, do not use, include, and/or incorporate a system for frequency down-converting a modulated carrier signal to a baseband signal comprising at least one or more of the following limitations: (i) a first switch coupled to a first control signal which comprises a sampling aperture with a specified frequency, wherein the first switch is on and a portion of energy that is distinguishable from noise is transferred from the modulated carrier signal as an output of said first switch during the sampling aperture of the first control signal; (ii) a first energy storage element that stores the transferred energy from the modulated carrier signal and outputs a down-converted in-phase baseband signal portion of said modulated carrier signal; (iii) a second switch coupled to a second control signal which comprises a sampling aperture with a specified frequency, wherein the second switch is on and a portion of energy that is distinguishable from noise is transferred from the modulated carrier signal as an output of said second switch during the sampling aperture of the second control signal; (iv) a second energy storage element that stores the transferred energy from the modulated carrier signal and outputs a down-converted inverted in-phase baseband signal portion of said modulated carrier signal; (v) wherein the portions of

transferred energy from each of the first and second switch are integrated over time to accumulate said portions of transferred energy from which said down-converted in-phase baseband signal portion and said down-converted inverted in-phase baseband signal portion are derived; and (vi) a first differential amplifier circuit that combines said down-converted in-phase baseband signal portion with said down-converted inverted in-phase baseband signal portion and outputs a first channel down-converted differential in-phase baseband signal.

68. Moreover, the PMB 5750 chip that ParkerVision accuses of infringement in its Third Amended Complaint was already found not to infringe European Patent No. 1 135 853 (“EP ‘853”) in a proceeding in Germany at least because “there is no sampling means according to the patent.” *See* Munich Regional Court, 7 O 2141/17, Final Judgment (trans.) (Ger.) at 19, Apr. 25, 2019. The EP ‘853 patent claims priority to U.S. Patent No. 6,061,551 (“‘551 patent”), and the ‘528 patent expressly incorporates by reference the ‘551 patent. In addition, like Claim 1 of the ‘528 patent, the EP ‘853 patent includes claims that require “sampling.” *See id.* at 4 (“[A] sampling means for sampling the input signal at a sampling frequency....”).

69. Intel does not infringe the ‘528 patent because Intel does not make, use, test, sell, offer for sale, or import into the United States, and has not made, used, tested, sold, offered for sale, or imported into the United States, any products or methods that infringe any valid claim of the ‘528 patent, either directly or indirectly, literally or through the doctrine of equivalents, or otherwise.

70. Intel is entitled to a declaratory judgment that it has not infringed, and is not infringing, directly or indirectly (either literally, under the doctrine of equivalents, or otherwise) any valid, patent-eligible claim of the ‘528 patent.

EIGHTH COUNTERCLAIM

(Declaratory Judgment of Invalidity of U.S. Patent No. 9,118,528)

71. Intel repeats and re-alleges each and every allegation set forth in the foregoing Paragraphs as if fully set forth herein.

72. Intel counterclaims against ParkerVision pursuant to the patent laws of the United States, Title 35 of the United States Code, and the Declaratory Judgments Act, 28 U.S.C. §§ 2201 and 2202.

73. In its Third Amended Complaint, ParkerVision alleges that Intel is directly infringing, literally and/or under the doctrine of equivalents, the ‘528 patent, and that the ‘528 patent is valid and enforceable.

74. An actual controversy exists between ParkerVision and Intel by virtue of the allegations in ParkerVision’s Third Amended Complaint and Intel’s Answer as to the validity and infringement of the ‘528 patent.

75. Intel contests the validity and enforceability of the ‘528 patent, and does not infringe the ‘528 patent at least because the claims of the ‘528 patent are invalid under 35 U.S.C. §§ 102, 103, 112, and/or 116.

76. For example, U.S. Patent No. 6,230,000 (“Tayloe”) discloses every element of at least Claim 1 of the ‘528 patent and therefore anticipates and/or renders obvious, including at least under ParkerVision’s apparent infringement theory, at least Claim 1 of the ‘528 patent under 35 U.S.C. §§ 102, 103. Intel has provided final invalidity contentions consistent with the schedule ordered by the Court and following ParkerVision’s final infringement contentions.

77. Similarly, the German Federal Patent Court found that all elements of ParkerVision’s related EP ‘853 patent are disclosed in the prior art article *A 900-MHz RF Front-End with Integrated Discrete-Time Filtering*, IEEE J. of Solid-State Circuits, Band 31, Nr. 12 (Dec. 1996) by Shen, D. H., et al., (“Shen”), and rejected ParkerVision’s argument that it invented a “fundamentally different approach to energy transmission down-conversion.” *See* Bundespatentgericht [BPtG] [Federal Patent Court] 5 Ni 19/17 (EP), Decision on Costs and Determination of the Value in Dispute (Ger.) (trans.) at 10, Dec. 16, 2019. The EP ‘853 patent claims priority to U.S. Patent No. 6,061,551 (“‘551 patent”), and the ‘528 patent expressly

incorporates by reference the ‘551 patent. In addition, like Claim 1 of the ‘528 patent, the EP ‘853 patent includes claims that require “sampling.” *See* Munich Regional Court, 7 O 2141/17, Final Judgment (trans.) (Ger.) at 4, Apr. 25, 2019. Shen likewise discloses and/or renders obvious the elements of at least Claim 1 of the ‘528 patent, and therefore invalidates that claim. Intel has provided final invalidity contentions consistent with the schedule ordered by the Court and following ParkerVision’s final infringement contentions.

78. Intel is entitled to a declaratory judgment that the claims of the ‘528 patent are invalid, including, without limitation, under 35 U.S.C. §§ 102, 103, 112, and/or 116.

NINTH COUNTERCLAIM

(Declaratory Judgment of Non-Infringement of U.S. Patent No. 9,246,736)

79. Intel repeats and re-alleges each and every allegation set forth in the foregoing Paragraphs as if fully set forth herein.

80. Intel counterclaims against ParkerVision pursuant to the patent laws of the United States, Title 35 of the United States Code, and the Declaratory Judgments Act, 28 U.S.C. §§ 2201 and 2202.

81. In its Third Amended Complaint, ParkerVision alleges that Intel is directly infringing, literally and/or under the doctrine of equivalents, the ‘736 patent, and that the ‘736 patent is valid and enforceable.

82. An actual controversy exists between ParkerVision and Intel by virtue of the allegations in ParkerVision’s Third Amended Complaint and Intel’s Answer as to the validity and infringement of the ‘736 patent.

83. The RF Transceiver Chips, including the accused Intel PMB 5750, PMB 5757, and PMB 5762, do not meet all of the elements of any of the claims of the ‘736 patent, and therefore Intel does not infringe the claims of the ‘736 patent.

84. For example, Intel does not infringe at least Claim 1 of the ‘736 patent because the RF Transceiver Chips, including the accused Intel PMB 5750, PMB 5757, and PMB 5762,

do not use, include, and/or incorporate a system for frequency down-converting a modulated carrier signal to a demodulated baseband signal, comprising at least one or more of the following limitations: (i) a first switch coupled to a first control signal which comprises a first sampling aperture with a specified frequency, wherein the first switch is on during the first sampling aperture and wherein the first switch is off outside the first sampling aperture; (ii) a first energy storage element, coupled to said first switch, that outputs a down-converted in-phase baseband signal portion of said modulated carrier signal; (iii) a second switch coupled to a second control signal which comprises a second sampling aperture with a specified frequency, wherein the second switch is on during the second sampling aperture and wherein the first switch is off outside the second sampling aperture; (iv) a second energy storage element, coupled to said second switch, that outputs a down-converted inverted in-phase baseband signal portion of said modulated carrier signal; (v) wherein the first and second control signals each control a charging and discharging cycle of their respective energy storage element so that for each switch a portion of energy from the modulated carrier signal is transferred to the respective energy storage element when the respective switch is on during the charging cycle, and a portion of previously transferred energy is discharged during the discharging cycle for each respective switch when the respective switch is off.

85. Further, Intel does not infringe at least Claim 1 of the '736 patent because the RF Transceiver Chips, including the accused Intel PMB 5750, PMB 5757, and PMB 5762, do not use, include, and/or incorporate a system for frequency down-converting a modulated carrier signal to a demodulated baseband signal comprising at least one or more of the following limitations (vi) wherein for each respective energy storage element, the energy discharged during any given discharge cycle is not completely discharged, with the remaining undischarged energy from the given discharge cycle becoming an initial condition for a next charging cycle that begins immediately following the given discharge cycle; (vii) wherein said

down-converted in-phase baseband signal portion is derived from energy accumulated at said first energy storage element during both the charging and the discharging cycles for the first energy storage element; (viii) wherein said down-converted inverted in-phase baseband signal portion is derived from energy accumulated at said second energy storage element during both the charging and the discharging cycles for the second energy storage element; and (ix) a first differential amplifier circuit that combines said down-converted in-phase baseband signal portion with said down-converted inverted in-phase baseband signal portion and outputs a first channel down-converted differential in-phase baseband signal.

86. Moreover, the PMB 5750 chip that ParkerVision accuses of infringement in its Third Amended Complaint was already found not to infringe European Patent No. 1 135 853 (“EP ‘853”) in a proceeding in Germany at least because “there is no sampling means according to the patent.” *See* Munich Regional Court, 7 O 2141/17, Final Judgment (trans.) (Ger.) at 19, Apr. 25, 2019. The EP ‘853 patent and the ‘736 patent both claim priority to U.S. Application No. 09/176,022, and the EP ‘853 patent, like Claim 1 of the ‘736 patent, includes claims that require “sampling.” *See id.* at 4 (“[A] sampling means for sampling the input signal at a sampling frequency....”).

87. Intel does not infringe the ‘736 patent because Intel does not make, use, test, sell, offer for sale, or import into the United States, and has not made, used, tested, sold, offered for sale, or imported into the United States, any products or methods that infringe any valid claim of the ‘736 patent, either directly or indirectly, literally or through the doctrine of equivalents, or otherwise.

88. Intel is entitled to a declaratory judgment that it has not infringed, and is not infringing, directly or indirectly (either literally, under the doctrine of equivalents, or otherwise) any valid, patent-eligible claim of the ‘736 patent.

TENTH COUNTERCLAIM

(Declaratory Judgment of Invalidity of U.S. Patent No. 9,246,736)

89. Intel repeats and re-alleges each and every allegation set forth in the foregoing Paragraphs as if fully set forth herein.

90. Intel counterclaims against ParkerVision pursuant to the patent laws of the United States, Title 35 of the United States Code, and the Declaratory Judgments Act, 28 U.S.C. §§ 2201 and 2202.

91. In its Third Amended Complaint, ParkerVision alleges that Intel is directly infringing, literally and/or under the doctrine of equivalents, the ‘736 patent, and that the ‘736 patent is valid and enforceable.

92. An actual controversy exists between ParkerVision and Intel by virtue of the allegations in ParkerVision’s Third Amended Complaint and Intel’s Answer as to the validity and infringement of the ‘736 patent.

93. Intel contests the validity and enforceability of the ‘736 patent, and does not infringe the ‘736 patent at least because the claims of the ‘736 patent are invalid under 35 U.S.C. §§ 102, 103, 112, and/or 116.

94. For example, U.S. Patent No. 6,230,000 (“Taylor”) in combination with *A 900-MHz RF Front-End with Integrated Discrete-Time Filtering*, IEEE J. of Solid-State Circuits, Band 31, Nr. 12 (Dec. 1996) by Shen, D. H., et al., (“Shen”) renders obvious, including at least under ParkerVision’s alleged infringement theory, at least Claim 1 of the ‘736 patent under 35 U.S.C. § 103. At least under ParkerVision’s apparent infringement theory, Taylor discloses and/or renders obvious every element of Claim 1. To the extent ParkerVision contends Taylor does not disclose a second switch and a second control signal, those elements are disclosed and/or rendered obvious by at least Shen. Intel has provided final invalidity contentions

consistent with the schedule ordered by the Court and following ParkerVision's final infringement contentions.

95. Similarly, the German Federal Patent Court found that all elements of ParkerVision's related EP '853 patent are disclosed in Shen and rejected ParkerVision's argument that it invented a "fundamentally different approach to energy transmission down-conversion." *See* Bundespatentgericht [BPatG] [Federal Patent Court], 5 Ni 19/17 (EP), Decision on Costs and Determination of the Value in Dispute (Ger.) (trans.) at 10 Dec. 16, 2019. The EP '853 patent, like the '736 patent, claims priority to the U.S. Application No. 09/176,022. Further, like Claim 1 of the '736 patent, the EP '853 patent includes claims that require "sampling." *See* Munich Regional Court, 7 O 2141/17, Final Judgment (trans.) (Ger.) at 4, Apr. 25, 2019. Shen likewise discloses and/or renders obvious the elements of at least Claim 1 of the '736 patent, and therefore invalidates that claim. Intel has provided final invalidity contentions consistent with the schedule ordered by the Court and following ParkerVision's final infringement contentions.

96. Intel is entitled to a declaratory judgment that the claims of the '736 patent are invalid, including, without limitation, under 35 U.S.C. §§ 102, 103, 112, and/or 116.

ELEVENTH COUNTERCLAIM

(Declaratory Judgment of Non-Infringement of U.S. Patent No. 9,444,673)

97. Intel repeats and re-alleges each and every allegation set forth in the foregoing Paragraphs as if fully set forth herein.

98. Intel counterclaims against ParkerVision pursuant to the patent laws of the United States, Title 35 of the United States Code, and the Declaratory Judgments Act, 28 U.S.C. §§ 2201 and 2202.

99. In its Third Amended Complaint, ParkerVision alleges that Intel is directly infringing, literally and/or under the doctrine of equivalents, the '673 patent, and that the '673 patent is valid and enforceable.

100. An actual controversy exists between ParkerVision and Intel by virtue of the allegations in ParkerVision's Third Amended Complaint and Intel's Answer as to the validity and infringement of the '673 patent.

101. The RF Transceiver Chips, including the accused Intel PMB 5750, PMB 5757, and PMB 5762, do not meet all of the elements of any of the claims of the '673 patent, and therefore Intel does not infringe the claims of the '673 patent.

102. For example, Intel does not infringe at least Claim 1 of the '673 patent because the RF Transceiver Chips, including the accused Intel PMB 5750, PMB 5757, and PMB 5762, do not use, include, and/or incorporate an apparatus for down-converting an input modulated carrier signal to a demodulated baseband signal, wherein the modulated carrier signal has an amplitude variation, a phase variation, a frequency variation, or a combination thereof, the apparatus comprising at least one or more of the following limitations: (i) a frequency down-conversion module comprising: a switch, a capacitor coupled to said switch, and a pulse generator coupled to said switch; (ii) said pulse generator outputting pulses to said switch at a rate that is a function of a frequency of the modulated carrier signal and a frequency of the demodulated baseband signal determined according to: (the frequency of the modulated carrier signal \pm a frequency of the demodulated baseband signal) divided by N, where N is any integer including 1; (iii) wherein said pulses have apertures and said pulses cause said switch to open outside of said apertures and cause said switch to close and sample the modulated carrier signal during said apertures by transferring energy from the modulated carrier signal and accumulating the transferred energy in said capacitor each time said switch is closed; and (iv) wherein some of the previously accumulated energy is discharged from said capacitor into

load circuitry each time said switch is open; and (v) wherein the demodulated baseband signal is generated from (i) the accumulating of the energy transferred to the capacitor each time the switch is closed and (ii) the discharging of said some of the previously accumulated energy into the load circuitry each time the switch is opened.

103. Moreover, the PMB 5750 chip that ParkerVision accuses of infringement in its Third Amended Complaint was already found not to infringe European Patent No. 1 135 853 (“EP ‘853”) in a proceeding in Germany at least because “there is no sampling means according to the patent.” *See* Munich Regional Court, 7 O 2141/17, Final Judgment (trans.) (Ger.) at 19, Apr. 25, 2019. The EP ‘853 patent and the ‘673 patent both claim priority to U.S. Application No. 09/176,022, and the EP ‘853 patent, like Claim 1 of the ‘673 patent, includes claims that require “sampling.” *See id.* at 4 (“[A] sampling means for sampling the input signal at a sampling frequency....”).

104. Intel does not infringe the ‘673 patent because Intel does not make, use, test, sell, offer for sale, or import into the United States, and has not made, used, tested, sold, offered for sale, or imported into the United States, any products or methods that infringe any valid claim of the ‘673 patent, either directly or indirectly, literally or through the doctrine of equivalents, or otherwise.

105. Intel is entitled to a declaratory judgment that it has not infringed, and is not infringing, directly or indirectly (either literally, under the doctrine of equivalents, or otherwise) any valid, patent-eligible claim of the ‘673 patent.

TWELFTH COUNTERCLAIM

(Declaratory Judgment of Invalidity of U.S. Patent No. 9,444,673)

106. Intel repeats and re-alleges each and every allegation set forth in the foregoing Paragraphs as if fully set forth herein.

107. Intel counterclaims against ParkerVision pursuant to the patent laws of the United States, Title 35 of the United States Code, and the Declaratory Judgments Act, 28 U.S.C. §§ 2201 and 2202.

108. In its Third Amended Complaint, ParkerVision alleges that Intel is directly infringing, literally and/or under the doctrine of equivalents, the ‘673 patent, and that the ‘673 patent is valid and enforceable.

109. An actual controversy exists between ParkerVision and Intel by virtue of the allegations in ParkerVision’s Third Amended Complaint and Intel’s Answer as to the validity and infringement of the ‘673 patent.

110. Intel contests the validity and enforceability of the ‘673 patent, and does not infringe the ‘673 patent at least because the claims of the ‘673 patent are invalid under 35 U.S.C. §§ 102, 103, 112, and/or 116.

111. For example, U.S. Patent No. 6,230,000 (“Tayloe”) in combination with U.S. Patent No. 5,345,471 (“McEwan”) renders obvious, including at least under ParkerVision’s alleged infringement theory, at least Claim 1 of the ‘673 patent under 35 U.S.C. § 103. At least under ParkerVision’s apparent infringement theory, Tayloe discloses and/or renders obvious every element of Claim 1. To the extent ParkerVision contends that Tayloe does not disclose energy transferred to a load during an off-time, that element is disclosed and/or rendered obvious by at least McEwan. Intel has provided final invalidity contentions consistent with the schedule ordered by the Court and following ParkerVision’s final infringement contentions.

112. Similarly, the German Federal Patent Court found that all elements of ParkerVision’s related EP ‘853 patent are disclosed in the prior art article *A 900-MHz RF Front-End with Integrated Discrete-Time Filtering*, IEEE J. of Solid-State Circuits, Band 31, Nr. 12 (Dec. 1996) by Shen, D. H., et al., (“Shen”), and rejected ParkerVision’s argument that it invented a “fundamentally different approach to energy transmission down-conversion.” *See*

Bundespatentgericht [BPatG] [Federal Patent Court] 5 Ni 19/17 (EP), Decision on Costs and Determination of the Value in Dispute (Ger.) (trans.) at 10, Dec. 16, 2019. The EP ‘853 patent, like the ‘673 patent, claims priority to the U.S. Application No. 09/176,022. Further, like Claim 1 of the ‘673 patent, the EP ‘853 patent includes claims that require “sampling.” *See* Munich Regional Court, 7 O 2141/17, Final Judgment (trans.) (Ger.) at 4, Apr. 25, 2019. Shen likewise discloses and/or renders obvious the elements of at least Claim 1 of the ‘673 patent, and therefore invalidates that claim. Intel has provided final invalidity contentions consistent with the schedule ordered by the Court and following ParkerVision’s final infringement contentions.

113. Intel is entitled to a declaratory judgment that the claims of the ‘673 patent are invalid, including, without limitation, under 35 U.S.C. §§ 102, 103, 112, and/or 116.

DEMAND FOR JURY TRIAL

Intel demands a trial by jury on all issues triable of right by a jury raised in ParkerVision’s Third Amended Complaint, Intel’s Answer, and Intel’s Counterclaims pursuant to Federal Rule of Civil Procedure.

PRAYER FOR RELIEF

WHEREFORE, Intel denies that ParkerVision is entitled to any relief, including, without limitation, as described in the “Prayer for Relief” section of ParkerVision’s Third Amended Complaint.

Intel prays for:

- A. A judgment in favor of Intel dismissing with prejudice ParkerVision’s Third Amended Complaint in its entirety and denying the relief requested therein;
- B. A declaration that the ‘902, ‘474, ‘725, ‘528, ‘736, and ‘673 patents are not infringed by Intel;
- C. A declaration that the claims of the ‘902, ‘474, ‘725, ‘528, ‘736, and ‘673 patents are invalid;

- D. A finding that this is an exceptional case under 35 U.S.C. § 285, including an award to Intel of attorneys' fees, costs, and disbursements incurred in defending this action; and
- E. Such other and further relief as the Court deems just and proper.

Dated: July 18, 2022

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that all counsel of record are being served with a copy of the foregoing document via electronic mail on July 18, 2022.

/s/ J. Stephen Ravel

J. Stephen Ravel